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HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

NEW YORK, NEW HAVEN & HARTFORD RAILROAD, HABS No. CT-142-A
COS COB POWER PLANT
Sound Shore ~~Road~~ Drive
Town of Greenwich
Fairfield County
Connecticut

Jet Lowe, Photographer, July 1993

CT-142-A-1 PERSPECTIVE VIEW FROM NORTHWEST OF NORTH SIDE. LOW BUILDING IN CENTER IS A SIGNAL POWER GENERATING STATION (C. 1986). LOW TOWER STRUCTURE ON THE LEFT IS ANCHOR BRIDGE NUMBER 310, LOCATION OF POWER FEED TO THE CATENARY SYSTEM.

CT-142-A-2 VIEW FROM THE WEST OF THE WEST ELEVATION OF THE TURBINE HALL (RIGHT) AND WEST BOILER ROOM (LEFT).

CT-142-A-3 VIEW FROM THE NORTH OF THE WEST END OF THE NORTH SIDE. EXPOSED STEEL STRUCTURE ON ROOF WAS ADDED IN 1933-1934 TO HOUSE PULVERIZED COAL BOILERS 902 AND 903. SHEATHING PANELS HAVE BEEN REMOVED TO PRECLUDE ADDITIONAL DAMAGE.

CT-142-A-4 VIEW OF MIANUS HARBOR LOOKING SOUTH FROM PEAK OF THE TURBINE HALL. MAIN SWITCH HOUSE WHICH ACCOMMODATED AUTOTRANSFORMERS/RESISTANCE GRIDS (FIRST FLOOR) AND CIRCUIT BREAKERS/MAIN BUS (SECOND FLOOR IS IN THE LEFT CENTER. THE SPANISH MISSION STYLING IS APPARENT ON THE BACK OF THE FACADE IN THE RIGHT CENTER OF THE PHOTOGRAPH.

CT-142-A-5 VIEW TO THE EAST NORTH EAST FROM PEAK OF THE TURBINE HALL. THE BRICK STACK TO THE RIGHT EXHAUSTED BOILER 904 WHICH WAS INSTALLED IN 1944. STEEL SHEATHED STRUCTURE IN CENTER OF PHOTOGRAPH HOUSED BOILERS 902 AND 903.

CT-142-A-6 VIEW TO THE NORTHEAST OF WEST BOILER ROOM LUDOWICI TILE ROOF. THE ROOF OVER THE TURBINE HALL IN THE RIGHT FOREGROUND WAS REPLACED JUST PRIOR TO THE PLANT'S SHUTDOWN IN 1986. SEAGULLS DROP SHELLFISH ON THE HARD LUDOWICI TILE ROOF TO BREAK THEM OPEN. THE WHITE PARTICLES ON THE TILE ROOF ARE SHELL FRAGMENTS. NOTE THE RELATIVE LACK OF SHELLS ON THE SOFTER ASPHALT COMPOSITION ROOF.

CT-142-A-7 VIEW TO THE EAST OF ARCHED WINDOW WHICH WAS PART OF THE ORIGINAL 1907 WEST FACADE OF THE EAST BOILER ROOM.

THE STRUCTURE HOUSED THE UPPER PORTION OF THE DEAERATORS.

CT-142-A-8 VIEW LOOKING NORTH OF WEST BOILER ROOM LUDOWICI TILE ROOF. TWO 600,000 GALLON RESERVOIRS FOR BOILER FEED WATER ARE ON THE LEFT CENTER OF THE PHOTOGRAPH.

CT-142-A-9 VIEW LOOKING NORTHWEST FROM TURBINE HALL ROOF AT TWO 600,000 GALLON RESERVOIRS FOR BOILER FEED WATER.

CT-142-A-10 VIEW OF CATENARY AND EAST SIDE OF COS COB POWER PLANT FROM THE EAST NORTH EAST.

CT-142-A-11 VIEW OF EAST SIDE OF PLANT FROM BRIDGE TENDERS HOUSE ON MIANUS RIVER RAILROAD BRIDGE. REMAINS OF COAL DOCK AND SCREEN HOUSE FOR STRAINING INTAKE WATER ARE SHOWN IN LEFT CENTER OF PHOTOGRAPH.

CT-142-A-12 VIEW LOOKING WEST OF INTERIOR OF SCREEN HOUSE OVER BRACKISH COOLING WATER INTAKE FLUME. PARTIALLY RAISED SCREEN IS SHOWN AT LOWER LEFT OF PHOTOGRAPH. THE REMAINS OF A COAL CRUSHER AND ELEVATOR STRUCTURE ARE SHOWN AT THE LEFT TOP BACKGROUND OF THE PHOTOGRAPH.

CT-142-A-13 VIEW LOOKING NORTHEAST FROM ROOF OF WEST BOILER ROOM AT SIROCCO DUST COLLECTOR WHICH FORMED PART OF THE ORIGINAL POLLUTION CONTROL SYSTEM FOR BOILERS 900 AND 901 INSTALLED IN 1926-1928.

CT-142-A-14 VIEW FROM TRACK AT NORTHEAST CORNER OF THE PLANT TOWARD A COAL TRESTLE EAST OF THE PLANT. THE TRESTLE WAS ADDED IN 1910. HOPPER CARS WERE WINCHED OVER A CRUSHER LOCATED DIRECTLY UNDER THE SHED AND DUMPED. A HEATED TRACK SECTION JUST BEYOND THE SHED WAS USED TO THAW FROZEN CARS IN COLD WEATHER.

CT-142-A-15 VIEW OF COAL TRESTLE LOOKING NORTHEAST. COAL DUMPED FROM HOPPER CARS COULD BE CRUSHED AND LOADED ON A CONVEYOR THAT PARALLELED THE TRACK TO THE EAST (LEFT) AND CARRIED IT TO A 1000 TON BUNKER LOCATED ON THE NORTH SIDE OF THE EAST BOILER ROOM. COAL COULD ALSO GO THROUGH THE CRUSHER AND BE DIVERTED TO THE CONVEYOR SHOWN IN THE LEFT FOREGROUND. COAL PILES FORMED UNDER THE CONVEYOR WOULD BE MOVED AND SHAPED BY BULLDOZER. A GROUND LEVEL HOPPER WAS LOCATED TO THE RIGHT OF THE SLOPING HOUSING WHICH EXTENDS FROM THE SOUTH

SIDE OF THE COAL TRESTLE. THIS HOPPER FED A CONVEYOR LOCATED WITHIN THE SLOPING HOUSING. COAL DROPPED INTO THE HOPPER WOULD BE CONVEYED INTO THE CRUSHER UNDER THE TRESTLE AND THEN DIVERTED TO THE CONVEYOR WHICH LOADED THE 1000 TON BUNKER. THE NEW COAL HANDLING SYSTEM WAS DESIGNED BY GIBBS AND HILL IN 1947.

CT-142-A-16 VIEW LOOKING SOUTHWEST FROM NORTHWEST CORNER OF ROOF OF THE TURBINE HALL. THE SWITCHYARD AND ELECTRICAL EQUIPMENT CONSTITUTES THE JUNCTION BETWEEN COMMERCIAL POWER FROM NORTHEAST UTILITIES AND THE METRO-NORTH RAILROAD (SUCCESSOR TO THE NEW HAVEN).

CT-142-A-17 VIEW OF ANCHOR BRIDGE NUMBER 310 LOOKING EAST ALONG THE MAIN LINE TRACK LOCATED TO THE NORTH OF THE COS COB POWER PLANT. ANCHOR BRIDGES LOCATED AT TWO MILE INTERVALS WITHSTAND CATENARY TENSION AND PROVIDE A PLATFORM FOR MOUNTING OIL FILLED CIRCUIT BREAKERS, LIGHTNING ARRESTORS AND OTHER ELECTRICAL EQUIPMENT. THE ROOF OF THE LOAD DISPATCHER'S TOWER CAN BE SEEN DIRECTLY BEHIND THE RIGHT SIDE OF THE BRIDGE.

CT-142-A-18 VIEW OF ANCHOR BRIDGE NUMBER 310 LOOKING WEST ALONG THE MAIN TRACK LOCATED TO THE NORTH OF THE COS COB POWER PLANT. THE LOAD DISPATCHER'S TOWER IS SHOWN IN THE LEFT FOREGROUND. AT THIS STATION THE DISPATCHER CONTROLLED POWER OUTPUT TO VARIOUS PARTS OF THE SYSTEM. THE STRUCTURE SERVES THE SAME PURPOSE IN 1993 AND CAN BE OPERATED LOCALLY OR REMOTELY FROM METRO-NORTH'S HEADQUARTERS IN MANHATTAN. THE STEEL STRUCTURE AND STACK IN THE BACKGROUND ARE PART OF THE BOILER 902-903 INSTALLATION.

CT-142-A-19 VIEW OF ANCHOR BRIDGE NUMBER 310 LOOKING NORTHEAST FROM THE ROOF OF THE NORTH SIDE OF THE EAST BOILER ROOM. THE ROOF OF THE LOAD DISPATCHER'S TOWER IS DIRECTLY BEHIND THE FEEDER TOWER ON THE RIGHT SIDE OF THE PHOTOGRAPH. THIS TERMINAL IS THE JUNCTION BETWEEN NORTHEAST UTILITIES LINES AND THE RAILROAD CATENARY.

CT-142-A-20 VIEW OF CATENARY, FEEDER TOWERS AND COS COB POWER PLANT (CENTER BACKGROUND) LOOKING WEST FROM THE NORTH SIDE OF THE MIANUS RIVER BASCULE BRIDGE. NOTE THAT THE CATENARY ENDS AT BRIDGE 313. TRAINS

ARE CARRIED ACROSS THE BASCULE BRIDGE BY THEIR OWN MOMENTUM AND PICK UP THE CATENARY ON THE EAST SIDE OF THE RIVER. THE FEEDER LINES CARRY POWER ACROSS THE RIVER ABOVE THE LEVEL OF THE OPENED BASCULE ON THE TOWERS TO THE LEFT AND RIGHT.

CT-142-A-21 VIEW OF MIANUS RIVER RAILROAD BRIDGE LOOKING NORTHEAST FROM THE REMAINS OF THE COS COB POWER PLANT COALING DOCK. THE BRIDGE IS A ROLLING LIFT BASCULE TYPE BUILT IN 1894-1895. NOTE THE ABSENCE OF CATENARY OVER THE CHANNEL AND THE METHOD OF CARRYING POWER FEED OVER THE RIVER ON THE HIGH TOWERS ADJACENT TO THE LIFT SECTION OF THE BRIDGE.

CT-142-A-22 VIEW OF WEST BOILER ROOM LOOKING SOUTH. THIS STRUCTURE WAS ADDED IN THE EXPANSION OF 1911-1912 AND CONTAINED FOURTEEN BOILERS WHICH WERE REMOVED IN 1938. IT SERVED AS A MAINTENANCE AND STORAGE FACILITY UNTIL THE PLANT CLOSED. NETTING ON THE LEFT WAS INSTALLED IN 1988 AFTER THE PLANT CLOSED AND ORIGINALLY STRETCHED ACROSS THE AISLE AS A SAFETY MEASURE. IT WAS INTENDED TO CATCH SHARDS OF ROOF MATERIAL WHICH SPALLED OFF DURING WINTER FREEZE/THAW CYCLES.

CT-142-A-23 VIEW FROM CATWALK OF EAST BOILER ROOM LOOKING NORTH. BOILERS 900 AND 901 ARE ON THE LEFT, BOILERS 902 AND 903 ARE ON THE RIGHT.

CT-142-A-24 VIEW OF FIRING AISLE OF EAST BOILER ROOM LOOKING SOUTH. BOILERS 900 AND 901 ARE ON THE RIGHT, BOILERS 902, 903 AND 904 ARE ON THE LEFT. NOTE REMAINS OF THE LARRY CAR TRACK SYSTEM FOR TRANSFERRING COAL TO BOILER HOPPERS ABOVE THE AISLE.

CT-142-A-25 VIEW OF FIRING AISLE IN THE EAST BOILER ROOM LOOKING NORTH. BOILERS 900 AND 901 ARE ON THE LEFT, 902 AND 903 ON THE RIGHT.

CT-142-A-26 VIEW OF SOUTHERN PORTION OF EAST BOILER ROOM LOOKING EAST AT BOILER 904. BOILER 904 WAS MANUFACTURED BY RILEY STOKER AND INSTALLED IN 1944. ORIGINALLY FUELED BY PULVERIZED COAL, IT WAS CONVERTED TO GAS/OIL OPERATION IN 1978 AND OPERATED UNTIL THE PLANT CLOSED.

CT-142-A-27 VIEW OF SOUTHERN PORTION OF EAST BOILER ROOM LOOKING EAST AT UPPER PORTION BOILER 904. BOILER

904 WAS MANUFACTURED BY RILEY STOKER AND INSTALLED IN 1944. ORIGINALLY FUELED BY PULVERIZED COAL, IT WAS CONVERTED TO GAS/OIL OPERATION IN 1978 AND OPERATED UNTIL THE PLANT CLOSED.

CT-142-A-28 VIEW OF BOILER 901 (IS IT 900?) AT GROUND LEVEL. INSTALLED IN 1928 IT WAS FIRED WITH PULVERIZED COAL. THE PULVERIZERS ARE LOCATED TO THE LEFT AND RIGHT OF THE CENTER ASH PIT ACCESS, BELOW THE CIRCULAR AIR INTAKES. THE PULVERIZED ON THE LEFT WAS POWERED WITH AN ELECTRIC MOTOR WHILE THE UNIT ON THE RIGHT WAS DRIVEN BY A STEAM TURBINE. THE HOPPER (TOP CENTER) WAS FILLED VIA A LARRY CAR WHICH RODE ON TRACKS SUSPENDED ABOVE THE FIRING AISLE. THIS BOILER WAS SHUT DOWN IN 1957.

CT-142-A-29 VIEW OF AREA BEHIND BOILER 904 LOOKING SOUTH. THE HOPPERS IN THE RIGHT UPPER QUADRANT OF THE PHOTOGRAPH DISCHARGE FLY ASH INTO A VACUUM ASH COLLECTION SYSTEM. THE OGIVE SHAPED DEVICE BELOW THE HOPPER IS A RELIEF INTAKE VALVE FOR THE VACUUM ASH COLLECTION SYSTEM. THE "S" SHAPED CONDUITS TO THE LEFT OF THE HOPPERS CARRY BOILER FEED WATER FROM THE ECONOMIZERS (WATER PREHEATERS) TO THE BOILERS.

CT-142-A-30 VIEW OF BASEMENT BELOW FIRING AISLE OF EAST BOILER ROOM SHOWING BOILER FEED WATER PUMP.

CT-142-A-31 VIEW OF BASEMENT BELOW BOILER 904 LOOKING SOUTHEAST AT COAL PULVERIZER FOR BOILER 904.

CT-142-A-32 VIEW OF BASEMENT BELOW BOILER 904 LOOKING SOUTHEAST AT TURBINE DRIVEN FORCED DRAFT FAN FOR BOILER 904.

CT-142-A-33 VIEW OF BASEMENT UNDER EAST BOILER ROOM LOOKING TOWARD WEST BOILER ROOM BASEMENT THROUGH THE ASH TRANSFER TUNNEL. ASH HOPPER FOR BOILER 900 IS ON THE RIGHT. NOTE THE TRACKS ALONG THE FLOOR OF THE TUNNEL. A SMALL ELECTRIC LOCOMOTIVE HAULED CARS FOR TRANSFERRING ASH FROM BOILERS TO DISPOSAL SITES OUTSIDE THE BUILDING. THIS SYSTEM BECAME OBSOLETE IN 1938 WHEN BOILERS IN THE WEST BOILER ROOM WERE REMOVED AND PULVERIZED COAL WAS ADOPTED AS THE FUEL.

CT-142-A-34 VIEW OF SPACE BETWEEN BAYS SIX AND SEVEN IN CONDENSER BASEMENT BELOW TURBINE HALL.

CT-142-A-35 VIEW LOOKING EAST IN SOUTH END OF EAST BOILER ROOM. CYLINDRICAL TANKS ARE WORTHINGTON DEAERATORS. THESE REMOVED AIR FROM BOILER FEED WATER TO MINIMIZE CORROSION AND PITTING OF THE BOILER TUBES. AIR REMOVAL ALSO HELPED AVOID THE FORMATION OF FOAM IN THE SYSTEM.

CT-142-A-36 VIEW OF SOUTH END OF EAST BOILER ROOM LOOKING SOUTHWEST. THE CYLINDRICAL TANKS IN THE FOREGROUND CONTAIN AN ION-EXCHANGE RESIN FOR REMOVING CALCIUM FROM THE BOILER FEED TO REDUCE WATER "HARDNESS". THE SHALLOW TANK IN THE RIGHT BACKGROUND IS A DIATOMACEOUS EARTH FILTER TO REMOVE PARTICULATE MATTER FROM THE BOILER FEED. THE ION-EXCHANGE WATER SOFTENING SYSTEM WAS INSTALLED IN 1977.

CT-142-A-37 VIEW OF SIX GAP ROTARY RECTIFIER FOR MAINTAINING CORONA DISCHARGE IN THE COTTRELL ELECTROSTATIC GENERATORS. THE SYSTEM WAS CAPABLE OF PROVIDING 88,000 VOLTS TO THE ELECTRODES WITHIN THE PRECIPITATOR CHAMBER THE UNIT WAS LOCATED TO THE REAR OF BOILER 904 IN AN ENCLOSED ROOM.

CT-142-A-38 VIEW OF COTTRELL MAGNETIC IMPULSE GENERATOR ADJACENT TO SIX GAP ROTARY RECTIFIER. THIS UNIT GENERATED A MAGNETIC PULSE WHICH WAS TRANSMITTED TO THE COLLECTION PLATES IN THE ELECTROSTATIC PRECIPITATOR CHAMBER. THESE PERIODIC PULSES VIBRATE THE PLATES AND CAUSE PRECIPITATED PARTICLES OF SMOKE AND FLY ASH TO FALL TO THE BOTTOM OF THE PRECIPITATOR CHAMBER.

CT-142-A-39 VIEW OF HOPPERS LOCATED AT THE BOTTOM OF COTTRELL PRECIPITATOR CHAMBERS. PARTICLES REMOVED FROM THE FLUE GAS STREAM WERE DISCHARGED INTO THE VACUUM ASH COLLECTION PIPES LOCATED BELOW THE HOPPERS. THE COTTRELL PRECIPITATORS WERE LOCATED ON THE OUTSIDE WALL OF THE EAST BOILER ROOM. REFER TO PHOTOCOPY CT-142A-15.

CT-142-A-40 VIEW OF TURBINE HALL LOOKING SOUTHWEST AT WESTINGHOUSE-PARSONS TURBINE NUMBER 2. THIS UNIT WAS INSTALLED IN 1925.

CT-142-A-41 VIEW OF TURBINE HALL FROM MEZZANINE LOOKING NORTHWEST AT WESTINGHOUSE-PARSONS TURBOGENERATOR NUMBER 2. THIS UNIT WAS INSTALLED IN 1925.

CT-142-A-42 VIEW OF TURBINE HALL LOOKING WEST NORTHWEST FROM

THE MEZZANINE. TURBOGENERATORS 1, 2 AND 3 ARE IN THE FOREGROUND. UNITS IN THE BACKGROUND ARE FREQUENCY CONVERTERS WHICH SUPPLIED 25 CYCLE POWER DURING THE TRANSITION FROM COS COB POWER TO UTILITIES POWER.

CT-142-A-43 VIEW OF TURBINE HALL LOOKING WEST NORTHWEST FROM THE MEZZANINE. IN THE CENTER OF THE PHOTOGRAPHS ARE THREE FREQUENCY CONVERTERS INSTALLED IN 1983. THE FREQUENCY CONVERTERS SUPPLEMENTED COS COB POWER. DURING THE TRANSITION TO UTILITY POWER, CONVERTERS USED UTILITY INPUT POWER AT 60 CYCLES TO OUTPUT 25 CYCLE POWER FOR RAILROAD OPERATIONS. THE INTERIM SYSTEM INCREASED RELIABILITY AND ALLOWED COMPLIANCE WITH BOILER EMISSION LIMITATIONS.

CT-142-A-44 VIEW LOOKING EAST, OF WESTINGHOUSE-LEBLANC JET CONDENSER LOCATED UNDER TURBINE NUMBER 3. THE SPHERICAL HOUSING AT THE TOP RIGHT OF THE PHOTOGRAPH IS A RELIEF VALVE. IN THE EVENT OF TURBINE OVERPRESSURE THE RELIEF VALVE OPENS AND VENTS EXCESSIVE STEAM PRESSURE TO AN EXHAUST STACK THUS BYPASSING THE CONDENSER.

CT-142-A-45 VIEW OF CONTROL STATION AND BRACKISH WATER INLET VALVE FOR CONDENSER NUMBER 1.

CT-142-A-46 VIEW LOOKING NORTHEAST OF CONDENSER NUMBER 2 (LEFT BACKGROUND) AND MOTOR FOR PUMPING CONDENSER HOT WELL (LOWER CENTER OF PHOTOGRAPH). SPENT STEAM EXHAUSTED FROM THE TURBINE WAS CONDENSED BY A SPRAY OF BRACKISH WATER. THIS CREATED A PARTIAL VACUUM WHICH IMPROVED TURBINE EFFICIENCY. THE MIXTURE OF CONDENSED STEAM AND COOL BRACKISH WATER FELL TO THE BOTTOM OF THE CONDENSER INTO A HOT WELL. FROM THE WELL IT WAS PUMPED TO THE MAIN DISCHARGE FLUME.

CT-142-A-47 VIEW LOOKING SOUTHEAST OF UPPER SECTION OF JET CONDENSER NUMBER 2 (CENTER BACKGROUND). PIPE IN LEFT FOREGROUND IS THE BRACKISH WATER FEED MAIN AND ITS CONTROL VALVE.

CT-142-A-48 VIEW LOOKING NORTHEAST AT EXCITER RESISTANCE GRIDS LOCATED UNDER THE CONTROL ROOM ON SOUTH SIDE OF TURBINE HALL. THE GRIDS WERE AN ESSENTIAL PART OF THE CONTROL SYSTEM THAT MAINTAINED CONSTANT VOLTAGE ON THE RAILROAD POWER LINES. TIRRILL

VOLTAGE REGULATORS (SEE CT-142A-100) SENSED VOLTAGE VARIATIONS AND INITIATED SWITCHING SEQUENCES TO REGULATE THE VOLTAGE AND MAINTAIN A SYSTEM STANDARD VOLTAGE. THE RESISTANCE GRIDS WERE SEQUENTIALLY ADDED TO OR REMOVED FROM THE GENERATOR FIELD COIL CIRCUITS. THIS RESISTANCE LOAD DISSIPATED EXCITER GENERATOR POWER AS HEAT. THIS IN TURN WOULD VARY THE STRENGTH OF THE FIELD MAGNET AND CONSEQUENTLY RAISE OR LOWER THE OUTPUT VOLTAGE FROM THE MAIN GENERATOR ARMATURE.

CT-142-A-49 VIEW LOOKING NORTHEAST AT EXCITER GENERATOR "C" LOCATED UNDER CONTROL ROOM ON SOUTH SIDE OF TURBINE HALL. THE EXCITER GENERATORS PROVIDED DIRECT CURRENT TO THE FIELD COILS OF THE MAIN GENERATORS.

CT-142-A-50 VIEW LOOKING SOUTHWEST AT A MOTOR-GENERATOR SET LOCATED UNDER CONTROL ROOM. THREE 450 kva., 2500 VOLT, 60 CYCLE MOTOR-GENERATOR UNITS PROVIDED POWER FOR THE RAILROAD SIGNAL SYSTEM. 25 CYCLE POWER WAS PROVIDED TO THE MOTOR (LEFT BACKGROUND). THE MOTOR TURNED THE GENERATOR (CENTER FOREGROUND) WHICH PRODUCED 60 CYCLE POWER TO OPERATE LIGHTS AND SIGNALING DEVICES.

CT-142-A-51 MAIN CONTROL ROOM LOOKING NORTHEAST. THE INSTRUMENT LOCATED AT THE TOP CENTER IS A SYNCHROSCOPE USED TO ASCERTAIN PHASE OF A GENERATOR PRIOR TO CONNECTING IT ON LINE. WHEN THE OPERATOR DETERMINED THAT THE GENERATOR WAS SYNCHRONIZED WITH OTHER GENERATORS ON LINE, IT WOULD BE CONNECTED TO THE SYSTEM.

CT-142-A-52 VIEW OF REMAINS OF ORIGINAL 1907 CONTROL PANEL, LOCATED ON NORTH WALL OF EAST END OF CONTROL ROOM. PORTIONS OF THIS PANEL REMAINED IN USE UNTIL THE PLANT CLOSED. THE METERS AND CONTROLS ARE MOUNTED ON SOAPSTONE PANELS. THE INSTRUMENT IN THE LEFT CENTER OF THE PHOTOGRAPH IS A TIRRILL VOLTAGE REGULATOR.

CT-142-A-53 VIEW OF TIRRILL VOLTAGE REGULATOR LOCATED ON SOUTH WALL OF CONTROL ROOM. THE SOLENOID COILS AT THE TOP RIGHT OF THE PHOTOGRAPH DETECT VARIATIONS IN VOLTAGE AND CURRENT. THE ARMATURES OF THESE COILS ACT ON A SPRING LOADED BEAM. MOVEMENT OF THIS BEAM INDIRECTLY CONTROL SWITCHES WHICH CAUSE RESISTANCE GRIDS TO BE SWITCHED IN OR OUT OF THE EXCITER

GENERATOR FIELD COILS (SEE CT-142A-95).

CT-142-A-54 VIEW OF STRIP CHART RECORDERS LOCATED ON NORTH WALL OF CONTROL ROOM. THESE MAY BE ORIGINAL INSTRUMENTS. BEARINGS ARE MADE OF LIGNUM VITAE.

CT-142-A-55 VIEW OF REAR OF EAST WALL OF CONTROL ROOM.

CT-142-A-56 VIEW OF REAR OF SOUTH WALL OF CONTROL ROOM.

CT-142-A-57 VIEW LOOKING NORTHWEST OF SIGNAL POWER CONDITIONING ROOM LOCATED OVER CONTROL ROOM MEZZANINE. SHOWN WITHIN THE BRICK PARTITIONS ARE SIGNAL VOLTAGE AUTOTRANSFORMERS.

CT-142-A-58 VIEW OF SIGNAL BUS SECTION NUMBER 2 LOCATED OVER THE CONTROL ROOM MEZZANINE IN THE SIGNAL POWER CONDITIONING ROOM. BUS IS A HEAVY COPPER BAR APPROXIMATELY 1/2" BY 4" WHICH CONDUCTS POWER THROUGHOUT THE POWER PLANT. BUS ARE PROTECTED BY A BRICK AND SOAPSTONE HOUSING. OPENINGS FOR INSPECTION AND ACCESS WOULD NORMALLY BE PROTECTED BY GLASS DOORS. THE BUS WOULD BE SUPPORTED ON INSULATORS WITHIN THE BRICK CHAMBER. BUS WAS REMOVED AND SALVAGED WHEN THE STATION WAS ABANDONED. THE OBJECT IN THE TOP CENTER OF THE PHOTOGRAPH IS A POTENTIAL TRANSFORMER USED TO REDUCE BUS POTENTIAL OF 2200 VOLTS TO LOW VOLTAGES SAFE FOR USE IN CONTROL ROOM CIRCUITRY. POTENTIAL TRANSFORMERS ARE PRECISION DEVICES WHICH PRODUCE AN ACCURATE LOW VOLTAGE ANALOG OF THE HIGH VOLTAGE ON THE BUS.

CT-142-A-59 VIEW OF FUSES AND A CURRENT TRANSFORMER LOCATED IN THE SIGNAL POWER CONDITIONING ROOM. THE CURRENT TRANSFORMER (UPPER RIGHT) IS AN INDUCTION COUPLED SENSOR WHICH IS USED TO REDUCE HIGH CURRENT TO ANALOGOUS LOW VALUES SAFE TO USE IN CONTROL ROOM CIRCUITRY.

CT-142-A-60 VIEW OF THE CURRENT TRANSFORMER VAULT. THIS CURRENT TRANSFORMER WAS USED TO SENSE HIGH CURRENT BEING GENERATED ON GENERATOR NUMBER 3 AND REDUCE IT TO A LOWER, EXACT ANALOG VALUE THAT COULD BE SAFELY HANDLED AND MONITORED WITH THE CONTROL CIRCUITRY. THE CURRENT TRANSFORMER IS LOCATED IN THE CENTER OF THE PHOTOGRAPH. THE CONNECTING BUS ABOVE THE TRANSFORMER WAS REMOVED FOR SALVAGE.

CT-142-A-61 VIEW LOOKING NORTHWEST AT A SIGNAL REACTOR OR CHOKE COIL. WITHIN THE PROTECTIVE ENCLOSURE IS AN AIR AND PORCELAIN INSULATED COIL OF 5/8' DIAMETER STRANDED COPPER WIRE. REACTOR COILS WERE PLACED IN SERIES WITH EACH LEG OF THREE PHASE GENERATORS. THEIR FUNCTION WAS TO MODERATE SURGES OF CURRENT CAUSED BY LIGHTNING STRIKES, OPEN OR SHORT CIRCUIT PROBLEMS ON THE LINE.

CT-142-A-62 VIEW LOOKING NORTHWEST AT THE OIL FILLED CIRCUIT BREAKER FOR GENERATOR NUMBER 1. CIRCUIT BREAKERS ARE AUTOMATED SWITCHES WHICH DISCONNECT THE GENERATORS FROM THE LINE WHEN SHORT CIRCUITS OCCUR. WHEN CIRCUITS INVOLVING HIGH CURRENTS AND VOLTAGES ARE BROKEN, THE AIR SURROUNDING MECHANICAL PARTS OF THE SWITCH BECOMES IONIZED AND CONTINUES TO CONDUCT ELECTRIC POWER ACROSS ANY GAP IN THE SWITCH CONTACTS. TO PREVENT THIS AND INSURE A POSITIVE INTERRUPTION OF CURRENT, THE SWITCH CONTACTS ARE IMMERSED IN A CONTAINER OF OIL. THE OIL DOES NOT SUPPORT THE FORMATION OF AN ARC AND EFFECTIVELY CUTS OFF THE CURRENT WHEN THE SWITCH CONTACTS ARE OPENED.

CT-142-A-63 VIEW OF AUTOTRANSFORMERS. THE ACTUAL AUTOTRANSFORMERS ARE ENCLOSED IN THE OIL FILLED CYLINDERS ON THE RIGHT OF THE PHOTOGRAPH. THESE ELECTRICAL DEVICES BOOSTED THE GENERATOR OUTPUT OF 11,000 VOLTS TO 22,000 VOLTS PRIOR TO TRANSMISSION OUT TO THE MAIN FEEDER LINES. A SPARE INNER UNIT IS CONTAINED IN THE METAL BOX AT THE LEFT OF THE PHOTOGRAPH.

CT-142-A-64 VIEW, LOOKING EAST, OF LOCAL AND EMERGENCY SERVICE TRANSFORMERS LOCATED IN AN ARCADE ALONG THE SOUTH WALL OF THE POWER PLANT.

CT-142-A-65 VIEW, LOOKING EAST, OF MOTOR POWERED AIR COMPRESSOR LOCATED IN CONDENSER GALLERY BELOW TURBINE HALL.

CT-142-A-66 VIEW, LOOKING EAST, OF AIR COMPRESSOR LOCATED IN CONDENSER GALLERY BELOW TURBINE HALL. THIS UNIT WAS POWERED BY A RECIPROCATING STEAM ENGINE AND WAS PART OF THE ORIGINAL PLANT MACHINERY.

CT-142-A-67 VIEW, LOOKING WEST, OF A STEAM LAUNDRY LOCATED IN THE CONDENSER GALLERY UNDER THE TURBINE HALL. THE FACILITY WAS USED TO WASH WORKERS CLOTHES. THE

WASH TUB IS LOCATED AT THE LEFT OF THE PHOTOGRAPH. THE TUB WAS LOADED WITH LAUNDRY, SOAP AND WATER. STEAM WAS BLOWN IN THROUGH THE PIPE AT THE EXTREME LEFT OF THE PHOTOGRAPH. THE ROUNDED RIGHT END OF THE TUB PROMOTED TUMBLING AND SCRUBBING ACTION. ON THE RIGHT OF THE PHOTOGRAPH IS A STEAM POWERED CENTRIFUGE FOR SPIN DRYING LAUNDRY. THE WIRE FRAMES AT THE CENTER BACKGROUND ARE PANTS STRETCHERS. THEY WERE INSERTED INTO OVERALL OR TROUSER LEGS TO MINIMIZE WRINKLING AND ENCOURAGE DRYING. LAUNDRY WAS DRIED ON NEARBY STEAM PIPES. (WITH SCALE)

CT-142-A-68 SAME AS CT-142-A-67, WITHOUT SCALE

CT-142-A-69 VIEW, LOOKING NORTHEAST, OF PUMP LOCATED ON THE MIANUS RIVER DOCK. THE PUMP WAS ORIGINALLY POWERED BY STEAM AND LATER CONVERTED TO ELECTRICAL OPERATION. IT WAS USED TO PROVIDE A HIGH PRESSURE SOURCE OF MIANUS RIVER WATER FOR WASHING SCREENS ON THE INTAKE FLUME. ~~(SEE CT-142A-58, -59)~~.